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ABSTRACT

The relationship between attrition and a student's personality type was studied, using the Myers-Briggs Type Indicator (MBTI), which classifies people according to extraversion/introversion, sensing/intuition, thinking/feeling, and judgment/perception. In a second study, the extent to which a student's congruence with the personality types of other students within the person's major affected attrition and/or change of major was studied. Freshmen entering the University of North Carolina, Greensboro, in 1977 and 1978 were evaluated. Form F of the MBTI was administered to 663 freshmen during the summer orientation session of 1977 and to 952 freshmen during the 1978 orientation session. Because of the composition of the student body, approximately 80 percent of the sample was female and almost 90 percent was white. One year after the initial administration, the sample was divided into two groups on the basis of persistence/attrition. Multiple regression analyses were performed to predict dropouts using continuous scores on the four dimensions of the MBTI as the predictors, and dropout versus persister as the criterion variable. The results suggest that the MBTI may prove a valuable tool in predicting attrition, though only if examined major by major, and that certain types tend to choose certain majors. For instance, 85 percent of the music education majors, 84 percent of the nursing students, and 88 percent of the psychology majors were feeling types. In study two, congruence with the predominant type in the major appeared to be a much more reliable predictor of change of major than of dropout. In both studies, when attrition and change of major were investigated and the student's discipline was ignored, prediction was not possible. Prediction improved dramatically when these criteria were considered within specific disciplines. A list of personality characteristics of the different types and a bibliography are appended. (SW)

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PERSONALITY TYPE AND CONGRUENCE WITH ENVIRONMENT: THEIR RELATIONSHIP TO COLLEGE ATTRITION AND CHANGING OF MAJOR

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THE ASSOCIATION FOR INSTITUTIONAL RESEARCH

This paper was presented at the Twenty-First Annual Forum of the Association for Institutional Research held at the Leamington Hotel in Minneapolis, Minnesota, May 17-20, 1981. This paper was reviewed by the AIR Forum Publications Committee and was judged to be of high quality and of interest to others concerned with the research of higher education. It has therefore been selected to be included in the ERIC Collection of Forum Papers.

Mary Corcoran
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ABSTRACT

The first study examined the relationship of personality type as measured by the Myers-Briggs Type Indicator (MBTI) to withdrawal from the university. The second study investigated the extent to which a student's congruence with the personality types of other students within the person's major affected attrition and/or change of major.

Through multiple regression analysis, several of the dimensions of personality, as well as the degree of a student's congruence with other students' personality types within the individual's major were found to be significant predictors of dropping out for one or more majors. Also some significant differences were found between those students who changed major and those who did not.

PERSONALITY TYPE AND CONGRUENCE WITH ENVIRONMENT: THEIR RELATIONSHIP TO COLLEGE ATTRITION AND CHANGING OF MAJOR

Higher education faces many problems as we enter the new decade. One of the most serious is the problem of lack of enrollment growth and the concomitant planning problems. Kerr (1979) presents five alternative methods of predicting college enrollment. Of these, four indicate declines in enrollment ranging from ten to forty percent. Only one method predicts increases. Declines in enrollment can be countered by increased recruitment efforts by some colleges. However, with a declining overall pool of traditional students, this is obviously not a solution for every institution.

Increased recruitment efforts will increase enrollment to a certain extent, particularly if that recruitment concentrates on older students who have no college training, professionals training for new careers and women returning to the work force after an absence of several years. There is another solution, however, one that is often overlooked in the rush to recruit students. Results of national surveys conducted during the 70's demonstrate that only 60% of freshmen had earned a degree in four years' time (Boyer, Royer, and Webb, 1973) and that 30% and 16.5%, respectively, of two-year college students and four-year college students had dropped out after only one year (Golliday, 1977). Based

on this data it is obvious that a reduction in attrition has the potential of increasing enrollment at least as much as vigorous recruiting efforts. In a discussion of admissions policies, Grites (1979) discusses the "Madison Avenue" advertising approach which might be successful in securing new enrollments, but would likely not succeed in retaining those enrollments. In contrast, he recommends a "best fit" approach to recruiting which would use the information on student characteristics to seek out and admit those students whose potential for matriculation and graduation are greatest at a particular institution. Such an approach necessitates clearly articulated institutional ethos, living conditions and even weaknesses. Thus the approach Grites recommends would be enhanced by a clearer understanding of the student and of the way in which the student is likely to interface with other students in the institution. This "best fit" approach can be expanded to match students with appropriate majors. Several suggestions in this regard are discussed by Lenning, Sauer and Bean (1980).

The studies reported in this paper examine this interaction of students with their environment. In the first study, the relationship between attrition and the student's personality type as measured by the Myers-Briggs Type Indicator (MBTI) is analyzed. In the second study, an attempt is made to determine whether students with personality types different from the majority of students in in their particu-

lar major are more prone to drop out of school or to change major. Change of major was examined both because it may be an indication of dissatisfaction and because prediction of change of major has important counseling and planning implications.

The Myers-Briggs Type Indicator

The MBTI is a personality type indicator. The purpose of the instrument is to classify individuals according to their personality characteristics. The MBTI was not designed to identify or diagnose personality disorders; rather, Isabella Briggs Myers and Katherine C. Briggs developed the instrument to implement Carl G. Jung's theory of personality type. In accordance with Jung's theory, the instrument classifies individuals on each of four indices. The results are used to identify the person's bi-polar preferences on the four dimensions or indices. These four indices are;

1. Extraversion-Introversion (EI)--This index is designed to reflect whether the person is an extravert, oriented primarily to the outer world or an introvert with perception and judgment focused on an inner world of concepts and ideas.
2. Sensing-intuition (SN)--This index is designed to reflect the individual's preferred use of the perceptual process. Those classified as Sensing types tend

to become aware of things directly through one or another of the five senses while those classified as Intuitive types tend to enrich perceptions with ideas or associations.

3. Thinking-Feeling (TF)--This index is designed to reflect the person's preferred use of the judging process, i. e. whether the individual relies primarily upon thinking, which discriminates impersonally between true and false, or primarily upon feeling which discriminates between valued and non-valued.
4. Judgment-Perception (JP)--This index reflects whether the person prefers to rely on the judging process or upon the perceptual process.

The combinations produced by the two poles of each of the four dimensions lead to sixteen distinct personality types (ESTJ, ESTP, INFP, etc.).

Two points concerning the instrument should be emphasized. First, although people are classified as to which pole of the four indices they prefer, they occasionally will act in a manner more appropriate to preference for the opposite pole. Second, Jungian theory describes these four dimensions as dichotomies, so that a person is classified as either an introvert or an extravert, as either a sensing type or an intuitive, etc. The MBTI itself, however, is designed in such a way that continuous as well as dichotomous scores can be computed on each of the four dimensions. Although use of the continuous scores may not be in accord with

Jungian theory it does prevent the loss of information through reduction to a dichotomy. Therefore in this study, the MBTI will be scored both ways. The MBTI itself is a self-report instrument containing 166 items which can be completed in about an hour.

Estimates of reliability (split-half, using the Spearman-Brown formula) have been found to be relatively high, ranging from .44 to .89 with a median of .82 (Myers, 1962). The only estimates below .75 were for a group of under-achieving eighth grade students and a group of non-college preparatory twelfth grade students.

The theoretical base underlying the MBTI enables one to predict preferences of various types in such areas as careers and college majors. The predictive value of the MBTI has been examined by Myers and by The Center for Applications of Psychological Type (CAPT) at the University of Florida. Several of the studies are relevant to the present research. Myers (1962) reported that turnover of workers in a utility company was related to their personality type as measured by the MBTI. For example, the turnover rate of workers classified as intuitive by the MBTI was significantly higher than the turnover of workers classified as sensing types in both clerical and mechanical jobs. This outcome is consistent with the characteristics of individuals preferring the intuitive function. In other studies several aca-

demic and professional fields have been found to attract certain types or groups of types. For example, McCaulley (1976a) found that "....the tough-minded TJ types account for at least 40 percent..." of a sample of 1060 engineering students at Massachusetts Institute of Technology, Rensselaer Polytechnic Institute, and Cornell. This is a far greater percentage of TJ types than found in the general population. Myers (1967) reported that the highest dropout rate in nursing (from the population of students at fifty-three diploma schools) occurred in the SP types who have "....neither the intuitives' advantage in aptitude nor the judging types' advantage in application." In summary, McCaulley states that people

> do select careers which Jung's theory predicts--that is careers where the tasks are interesting to their type and call on the kinds of perception and judgment they prefer. Intuitive types are attracted to science--particularly the physical and behavioral sciences. At least in our University of Florida students there are differences in the types attracted to biology, zoology and physiology, as compared to types attracted to physics, chemistry and astronomy (McCaulley, 1976b, p. 5).

STUDY 1--THE RELATION OF PERSONALITY TYPE TO ATTRITION WITHIN SPECIFIC MAJORS

The purpose of this study was to examine the ability of the MBTI to predict dropouts and persisters in a wide range of academic disciplines. Findings that persisters in certain majors are different in type preferences from their counterparts who choose to drop out have implications for

high school educational/vocational counseling, for acceptance of students into particular college programs and for college student advisement, i.e., helping students find the areas in which they are likely to be successful as well as the ones in which they will want to remain.

METHOD

Sample

The MBTI was given to freshmen entering the University of North Carolina at Greensboro (UNC-G) in 1977 and 1978. Form F of the instrument was administered to 663 freshmen during the summer orientation session of 1977 and to 952 freshmen during the 1978 orientation session. The University is a public institution which was, until 1963, known as the Women's College of the University of North Carolina. The enrollment still reflects a decided differential so that the sample was approximately 80% female. Almost 90% of the students in the sample are white.

One year after the initial administration of the instrument (in 1978 for 1977 freshmen and in 1979 for 1978 freshmen) the sample was divided on the basis of whether or not each student remained in the university. Approximately twenty-five percent of these freshmen had left the university one year later.

Analysis Procedure

Multiple regression analyses were performed to predict dropouts using continuous scores on the four dimensions of the MBTI as the predictors and dropout vs. persister as the criterion variable.

Separate analyses were performed for all males, all females, and for all females enrolled in the thirteen academic areas in which the sample included 20 or more. Business administration was the only major in which the number of males was large enough to warrant a separate analysis.

RESULTS

All analyses in which student major was not considered resulted in nonsignificant results. This was not unexpected since the theory would predict that different dimensions and preferences would be associated with different majors. These expectations would likely be masked by analyses which do not control for major.

One or more of the four dimensions of the MBTI were found to be significant predictors of female student attrition for three of the thirteen majors. Table 1 summarizes the results of the regression analyses for these majors. The results are particularly striking for mathematics where 66% of

the thinking types dropped out along with 50% of the intuitives. These two dimensions account for 54% of the variance. None of the four dimensions were found to be significant predictors of attrition for the male students enrolled in business administration. Note that in Table 1 the direction of the dimension which is positively correlated with those who are more likely to remain is enclosed in parentheses. Thus an SF type was less likely than an NT type to drop out of the mathematics program.

DISCUSSION

In contrast with the results, MBTI dimensions were expected to be significant predictors in various majors more often than actually occurred. However, further examination of the distribution of the types in several of the majors provided a partial explanation for these results. For many of the major areas, a degree of selection had already taken place. Eighty-five percent of the Music Education majors, 84% of the Nursing students and 88% of the Psychology majors were feeling types. In addition, 87% of the Art students preferred the intuitive as opposed to the sensing dimension as did 83% of the Drama majors and 74% of the English majors. Thus for six of the ten majors for which the MBTI dimensions were not significant predictors, the variance in

one or more of the dimensions was so small as to greatly reduce the likelihood of obtaining significant results.

The results in Table 1 reflect the fact that excessive numbers of thinking (66% as opposed to 7% of feeling) types and intuitive (50% as opposed to 20% of sensing) types dropped out of the mathematics program at UNC-G. This would appear to be inconsistent with data reported by McCaulley (1976c) that 96% of a sample of creative mathematicians were intuitives and 68% were thinking types. However, the majority of undergraduate mathematics majors at UNC-G are planning to be teachers or applied mathematicians and McCaulley, in the same paper, reports that 62% of a sample of 413 mathematics teachers are sensing types and 50% are feeling types. Given that her sample was a mixed-sex group and that more females tend to be feeling types, the data reported here appear to be consistent with past research. McCaulley (1978) reported the MBTI types of 309 social workers. As might be expected given the interactive nature of the profession, 61% of the group were extroverted. Consistent with these results, 55% of the present sample chose the extroverted direction and only 13% of these dropped out as opposed to 42% of those choosing the introverted direction on the EI scale. No past research is available for comparison of the Clothing/Textile major.

It should be noted that other aspects of these results are also consistent with past research--that is, certain types do tend to choose certain majors. McCaulley (1976c) summarized the results of several studies of college students, primarily students at the University of Florida. She reported that 78% of Nursing majors and 81% of Education majors are feeling types. Journalism & Communication students and students in the humanities tend to be both intuitives(over 60%) and feeling types (over 65%) which is consistent with our finding that the English majors in our sample tended to be both intuitive (74%) and feeling types (74%).

The preponderance of feeling types in several of the majors which we examined can thus be explained both by the majors themselves, i.e. feeling types usually tend to gravitate toward these majors, and by the fact that we were dealing with an all female sample in all but one area. Myers (1962) reported between 57% and 68% of females in various samples were feeling types. This contrasts with 18% to 46% in the comparable male samples.

The results of Study 1 reinforce the assumption that the MBTI may prove to be a valuable tool in predicting attrition, though only if examined major by major. Further study with a larger sample should prove fruitful, particularly since many of the non-significant findings may be explained

by a reduction in variance resulting from the large percentages of students in a given major with similar characteristics.

STUDY 2--CONGRUENCY WITH OTHER STUDENTS IN A MAJOR AS A PREDICTOR OF ATTRITION AND CHANGE OF MAJOR

This study was designed to investigate the extent to which a student's congruence with the personality types of other students in that individual's major affected attrition and/or change of major. The assumption is that personality type can be related to both attrition and change of major in two ways; first, the content and requirements of certain fields may appeal more to some personality types than to others, and second, the personality types of other students in the major form a psychological environment which may affect a student's attitude toward the major and ultimately even the university. Study 1 investigated the first possibility. The present study is directed toward the second.

METHOD

Sample

As indicated above, Study 2 was concerned with the effect of the psychological environment (as measured by the MBTI) on dropping out and on changing major. The ideal measure of this psychological environment would be the average MBTI scores for all undergraduate students enrolled in a major

during a specific year, in this case, the 1978-1979 academic year. However since MBTI scores were not available for junior and senior students, the next best measure of the environment was average MBTI scores for 1978-1979 freshmen and sophomores. Since the 1977 freshmen who dropped out prior to the fall semester of 1978 neither formed part of that environment nor were affected by it, they were elimin ated from the sample for this study. With this exception, the sample for this study was the same as that for Study 1.

Analysis Procedure

Two measures of congruence were computed for each major. The first measure was based on considering the four dimensions as dichotomies (EI, SN, TF, JP); the second considered the four dimensions as continuous, and therefore employed the continuous scores for each of these dimensions. The congruence score based on dichotomous dimensions was obtained by comparing each student with all the students in his/her major. If a student preferred the same pole of the dimension as the majority of the students within the student's major, then the individual was given a score of "1" for that dimension. If the student preferred the opposite pole, then the student was given a score of "0". Since this procedure was followed for all four dimensions, five measures of congruence were computed: the congruence with each of the four dimensions of the MBTI and the sum of these four. Thus the maximum congruence score of four was given

to those students who preferred the same poles of all four dimensions as the majority of students in their major. Students preferring all the opposite poles to those chosen by a majority of the students in their major were given a score of zero. Similarly, congruence scores of "1" (congruent on one dimension), "2" (congruent on two dimensions), "3" (congruent on three dimensions) and "4" (congruent on four dimensions) were calculated.

The procedure just described which considers each of the dimensions as a dichotomy composed of opposite poles is more consistent with Jung's theory. However, one could also argue that by converting continuous scores to a dichotomy, valuable information is being lost. Therefore, a second set of congruence scores were calculated which employed the continuous scores. The mean continuous score for students in each major was computed. The absolute difference was computed between a student's continuous score on each dimension and the mean score of all students in the major on the same dimension. As with the dichotomous scores, this procedure produced five measures of congruence, one for each dimension and one overall score which was the mean of the differences on the four dimensions between each student's scores and the scores of the other students in that major.

Stepwise regression analyses were computed for those majors having at least 20 students with Myers-Briggs data. Separate analyses were completed for the dependent varia-

bles, dropout and change of major, using both dichotomous and continuous congruence scores.

RESULTS

The analyses were designed to allow us to determine whether the combination congruency scores which were computed from the dichotomous and from the continuous scores added significantly to the prediction of dropout or to change of major as compared to the scores on the four dimensions. It was found that they did not. Therefore the results that follow are from analyses in which the predictors were either the four congruency scores derived from the dichotomous dimensions or the four congruency scores derived from the continuous scores on the four dimensions.

Analyses were computed for female students in 13 majors, for male students with Business Administration as a major and for all students listing Business Administration as a major. However, in many cases, the number of students in the major or the number remaining after eliminating dropouts (when change of major was the dependent variable) was less than 20 which was considered too small for valid results. After all analyses based on fewer than 20 students were eliminated for females, 11 majors remained for which dropout data could be examined and three majors remained in which change of major could be examined. Dropout data for the male students could be considered but change of major could not.

The dichotomous congruency scores significantly predicted attrition in only one major--students congruent with the majority of Accounting majors on the EI dimension had a lower attrition rate. The majority of accounting students prefer the introverted orientation. The R-square for the equation was .19, (N=41). The probability of obtaining this result by chance is less than .05. Similar results were obtained when the continuous scores were considered for Accounting. In addition, when continuous scores were employed, the degree of congruence of the TF dimension for Drama students and the JP dimension for Music Education majors also predicted attrition. Table 2 contains a summary of the results of these three analyses. The predominant type of the dimensions found to be significant predictors is enclosed in parentheses.

The percentage of majors in which congruence with the predominant type in the major predicted attrition was relatively low (only three of 11 majors for females). In contrast, while the number of majors in which we could examine change of major was reduced to three (since only persisters were included in the sample), the percentage of majors in which congruence scores on one or more dimensions predicted change of major was 100 percent. Congruence scores on one or more of the four dimensions significantly predicted change of major on all three of the majors in which the number of subjects available for the analysis exceeded 20.

Table 3 contains a summary of the regression equations in which continuous congruence scores on one or more dimensions significantly predicted change of major. Note that the JP dimension was a significant predictor of change of major for Psychology, Business Administration, and Nursing students, while the EI dimension was a significant predictor for Nursing students. As in Table 2, the predominant type on the dimensions found to be significant predictors of change of major are enclosed in parentheses.

While the JP dimension predicted change of major in all three majors, the preferred direction differed. The majority of Nursing and Business Administration majors were Judging types and those students with continuous scores in the Judging direction were most likely to remain in the major. On the other hand, the majority of Psychology majors are perceiving types and those that remain in the major tend to have continuous scores in that direction. The majority of Nursing students are extroverted and continuous scores in the extroverted direction are positively correlated with persistence in Nursing.

DISCUSSION

Perhaps the most interesting feature of the results of Study 2 is that congruence with the predominant type in the major appears to be a much more reliable predictor of change of major than of dropout. This result was not unexpected in

that many factors other than incompatibility with the environment contribute to dropping out. Among these factors are financial problems, personal problems of various types and academic problems in all courses including those not directly related to the major. Change of major on the other hand appears to be more directly related to factors associated with the major itself. The results reported here, i. e., that congruence with one or more dimensions of the predominant type in the major predicted dropout in only three of 11 majors while the same congruence measures predicted change of major in all three majors in which the number of subjects was sufficient for analysis, suggest that the congruence measures used in this paper are more appropriate for use in analyzing change of major than in analyzing dropouts.

IMPLICATIONS

There are several important implications of these two studies. First, the results indicate the potential of the MBTI for college counseling. Obviously, further research is needed using different colleges with more students per major to more adequately test the predictive and explanatory power of the MBTI. As more institutions collect these data, this verification will be possible. Secondly, the results also indicate that noncognitive variables can predict behavior of interest to researchers in higher education when the criterion is made more specific. For example, in both studies,

when attrition and change of major were investigated and the student's discipline was ignored, prediction was not possible. However, when these criteria were considered within specific disciplines, the prediction improved dramatically. Therefore, these results may have implications for other studies using noncognitive variables. For example, in predicting grade point average, noncognitive variables have added little to the predictive power of cognitive variables such as SAT scores. However, certain noncognitive variables may be useful predictors if the criterion is grade point average in a specific discipline rather than overall grade point average. Finally, while this study is a pilot study, it does illustrate the advantages of employing an instrument which has a major theoretical base. Results can be predicted, explained, and linked to other studies thtough the theory. One purpose of this paper is ro alert researchers to the very significant potential of this technique.

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TABLE 1

Summary of MBTI Dimensions Found to be Significant Predictors of Dropout, by Major

Major	Dimensions	R-Square	N	P
Clothing/Textiles	(E)I	.10	50	p< .05
Mathematics	T(F)	.32	21	p< .05
	T(F) + (S)N	.54		p< .01
Social Work	(J)P	.16	27	p< .01
	(J)P + (E)I	.32		p< .05

TABLE 2

Summary of Significant Predictors of Attrition Based on Congruency with Continuous Scores on the Four MBTI Dimensions

Major	Dimensions	R-Square	N	P
Accounting	E(I)	.09	41	p< .05
Drama	T(F)	.26	23	p< .05
Music Education	(J)P	.16	24	p< .05

TABLE 3

Summary of Significant Predictors of Change of Major Based on Congruency with Continuous Scores on the Four MBTI Dimensions

Major	Dimensions	R-Square	N	P
Psychology	J(P)	.36	21	p< .01
Business Ad.	(J)P	.22	29	p< .01
Nursing	(E)I	.08	52	p< .05
	(E)I + (J)P	.15		p< .05

CHARACTERISTICS FREQUENTLY ASSOCIATED WITH EACH TYPE AMONG YOUNG PEOPLE

	SENSING TYPES		INTUITIVE TYPES	
INTROVERTS	**ISTJ** Serious, quiet, earn success by concentration and thoroughness. Practical, orderly, matter-of-fact, logical, realistic and dependable. See to it that everything is well organized. Take responsibility. Make up their own minds as to what should be accomplished and work toward it steadily, regardless of protests or distractions.	**ISFJ** Quiet, friendly, responsible and conscientious. Work devotedly to meet their obligations and serve their friends and school. Thorough, painstaking, accurate. May need time to master technical subjects, as their interests are usually not technical. Patient with detail and routine. Loyal, considerate, concerned with how other people feel.	**INFJ** Succeed by perseverance, originality and desire to do whatever is needed or wanted. Put their best efforts into their work. Quietly forceful, conscientious, concerned for others. Respected for their firm principles. Likely to be honored and followed for their clear convictions as to how best to serve the common good.	**INTJ** Usually have original minds and great drive for their own ideas and purposes. In fields that appeal to them, they have a fine power to organize a job and carry it through with or without help. Skeptical, critical, independent, determined, often stubborn. Must learn to yield less important points in order to win the most important.
	ISTP Cool onlookers—quiet, reserved, observing and analyzing life with detached curiosity and unexpected flashes of original humor. Usually interested in impersonal principles, cause and effect, how and why mechanical things work. Exert themselves no more than they think necessary, because any waste of energy would be inefficient.	**ISFP** Retiring, quietly friendly, sensitive, kind, modest about their abilities. Shun disagreements, do not force their opinions or values on others. Usually do not care to lead but are often loyal followers. Often relaxed about getting things done, because they enjoy the present moment and do not want to spoil it by undue haste or exertion.	**INFP** Full of enthusiasms and loyalties, but seldom talk of these until they know you well. Care about learning, ideas, language, and independent projects of their own. Tend to undertake too much, then somehow get it done. Friendly, but often too absorbed in what they are doing to be sociable. Little concerned with possessions or physical surroundings.	**INTP** Quiet, reserved, brilliant in exams, especially in theoretical or scientific subjects. Logical to the point of hair-splitting. Usually interested mainly in ideas, with little liking for parties or small talk. Tend to have sharply defined interests. Need to choose careers where some strong interest can be used and useful.
EXTRAVERTS	**ESTP** Matter-of-fact, do not worry or hurry, enjoy whatever comes along. Tend to like mechanical things and sports, with friends on the side. May be a bit blunt or insensitive. Can do math or science when they see the need. Dislike long explanations. Are best with real things that can be worked, handled, taken apart or put together.	**ESFP** Outgoing, easygoing, accepting, friendly, enjoy everything and make things more fun for others by their enjoyment. Like sports and making things. Know what's going on and join in eagerly. Find remembering facts easier than mastering theories. Are best in situations that need sound common sense and practical ability with people as well as with things.	**ENFP** Warmly enthusiastic, high-spirited, ingenious, imaginative. Able to do almost anything that interests them. Quick with a solution for any difficulty and ready to help anyone with a problem. Often rely on their ability to improvise instead of preparing in advance. Can usually find compelling reasons for whatever they want.	**ENTP** Quick, ingenious, good at many things. Stimulating company, alert and outspoken. May argue for fun on either side of a question. Resourceful in solving new and challenging problems, but may neglect routine assignments. Apt to turn to one new interest after another. Skillful in finding logical reasons for what they want.
	ESTJ Practical, realistic, matter-of-fact, with a natural head for business or mechanics. Not interested in subjects they see no use for, but can apply themselves when necessary. Like to organize and run activities. May make good administrators, especially if they remember to consider others' feelings and points of view.	**ESFJ** Warm-hearted, talkative, popular, conscientious, born cooperators, active committee members. Need harmony and may be good at creating it. Always doing something nice for someone. Work best with encouragement and praise. Little interest in abstract thinking or technical subjects. Main interest is in things that directly and visibly affect people's lives.	**ENFJ** Responsive and responsible. Generally feel real concern for what others think or want, and try to handle things with due regard for other people's feelings. Can present a proposal or lead a group discussion with ease and tact. Sociable, popular, active in school affairs, but put time enough on their studies to do good work.	**ENTJ** Hearty, frank, able in studies, leaders in activities. Usually good in anything that requires reasoning and intelligent talk, such as public speaking. Are usually well-informed and enjoy adding to their fund of knowledge. May sometimes be more positive and confident than their experience in an area warrants.

Figure 1 Description of the Types